

What is claimed is:

1. A method for controlling the brake system of a motor vehicle, said brake system of the type including a brake pedal, a pedal sensor system, an electronic evaluation unit and wheel brake modules, the method comprising the steps of:

generating a first signal representative of a first braking requirement based on a first physical value measured by a first measuring device,

generating a second signal representative of a second braking requirement based on a second physical value measured by a second measuring device, the second physical value being identical to the first physical value,

generating a third signal representative of a monitoring value measured by a third measuring device that monitors the brake pedal and the pedal sensor system, the monitoring value being different than the first and second physical values,

determining a first difference between the first and second signals,

wherein the driver's braking requirement is determined based on an average of the first and second signals when the first difference between the first and second signals is greater than a first predetermined value, and

wherein the first signal is equal to the third signal when a second difference between the first and third signals is greater than a third difference between the second and third signals, and

wherein the second signal is equal to the third signal when the third difference between the second and third signals is greater than the second difference between the first and third signals.

2. A method according to Claim 1, wherein the first and second physical values are a driver's foot force.

3. A method according to Claim 2, wherein a pedal actuation force is sensed to determine the driver's foot force.

4. A method according to Claim 1, wherein the third physical value is an angle of adjustment of the brake pedal.

5. A method according to Claim 1, wherein the third physical value is a pedal travel of the brake pedal.

6. A method according to Claim 1, wherein gradients of the first, second and third signals are used to determine the driver's braking requirement.

7. A device for controlling the brake system of a motor vehicle, comprising:
a pedal sensor system including a pedal sensing unit for sensing when the driver actuates a brake pedal, wherein said pedal sensing unit comprises:

a first measuring device for generating a first signal representative of a first braking requirement based on a first characteristic value,

a second measuring device for generating a second signal representative of a second braking requirement based on a second characteristic value, the second characteristic value measured by the second measuring device being identical to the first characteristic value measured by the first measuring device,

a third measuring device that monitors the brake pedal and the pedal sensor system for generating a third signal representative of a monitoring value, the monitoring value being different than the first and second characteristic values, and

an electronic evaluation unit for determining a first difference between the first and second signals,

wherein the driver's braking requirement is determined based on an average of the first and second signals when the first difference between the first and second signals is greater than a first predetermined value, and

wherein the first signal being equal to the third signal when a second difference between the first and third signals is greater than a third difference between the second and third signals, and

wherein the second signal being equal to the third signal when the third difference between the second and third signals is greater than the second difference between the first and third signals.

8. A device according to Claim 7, wherein the first and second measuring devices include sensors for sensing a driver's foot activation force.

9. A device according to Claim 7, wherein the first and second measuring devices include sensors for sensing one of a pedal travel and a pedal angle.

10. A method for controlling the brake system of a motor vehicle, said brake system of the type including a brake pedal, a pedal sensor system, an electronic evaluation unit and wheel brake modules, the method comprising the steps of:

generating a first signal representative of a first braking requirement based on a first physical value measured by a first measuring device,

generating a second signal representative of a second braking requirement based on a second physical value measured by a second measuring device, the second physical value being identical to the first physical value,

generating a third signal representative of a monitoring value measured by a third measuring device that monitors the brake pedal and the pedal sensor system, the monitoring value being different than the first and second physical values,

determining whether one of the first, second and third measuring devices are defective,

wherein the driver's braking requirement is determined based on an average of the first and second signals, the second signal being set equal to the third signal when the first and third measuring devices are operable and the second measuring device is defective, and

wherein the driver's braking requirement is determined based on the first signal when the first measuring device is operable and the second and third measuring devices are defective, and

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wherein the driver's braking requirement is determined based on an average of the first and second signals, the second signal being set equal to the third signal when the second and third measuring devices are operable and the first measuring device is defective, and

wherein the driver's braking requirement is determined based on the second signal when the second measuring device is operable and the first and third measuring devices are defective, and

wherein the driver's braking requirement is determined based on the third signal when the third measuring device is operable and the first and second measuring devices are defective.